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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/550,389

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EXAMINER

HU, HENRY S

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/550,389	<b>Applicant(s)</b> MORIKAWA ET AL.	
	<b>Examiner</b> HENRY S. HU	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on Election of December 3, 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-9 is/are pending in the application.
- 4a) Of the above claim(s) 6-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 9 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☒ Claim(s) 1-3 and 6-9 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. This Office Action is in response to **Re-Election** along with its **Pre-Amendment** both filed on December 3, 2008, which is response to Re-Restriction requirement filed on November 3, 2008. With such pre-amendment, **Claim 1 is amended; Claims 4-5 are cancelled, while new Claims 6-9 are added.** To be specific, parent **Claim 1** is amended to incorporate the limitation of Claim 4. Dependent **Claim 4** and non-elected **Claim 5** (Group II) are cancelled accordingly. Newly added **Claim 9** is dependent from parent Claim 1 and is thereby joined with the elected Group I (Claims 1-5).

2. Newly submitted **Claims 6-8** are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

In comparison with original Claims 1-4 (a graft or block polymer) and Claim 5 (a composition), new Claims 6-8 are related to **process claims** regarding the specific **polymerization conditions by using halogen transfer agent. They are “distinct” from the invention originally claimed.** The key point is that the graft or block polymer can be prepared by other type polymerization or coupling reaction, which is different from the halogen transfer polymerization.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. It is noted that the limitation of **Claims 1-3 and 9 is more closely related to the claimed limitation originally disclosed.** Accordingly, **Claims 6-8 are “withdrawn from consideration as being directed to a non-elected invention”**. See 37 CFR 1.142(b) and MPEP § 821.03.

This application **10/550,389** is a **371/PCT/JP04/08114 with a Japanese priority at June 11, 2003.** This Office Action is in response to **two IDS**’ (1 page each) filed so far. **Claims 1-3 and 6-9** with only **one** independent claim (Claim 1) are now pending, while non-elected Claims 6--8 (Groups **III**) is withdrawn from consideration. An action follows.

### *Specification*

3. The disclosure is objected to because of the following informalities:

(a) On **Page 5** at line 4 and may be throughout specification, the use of language such as “ $R_f^1$  is a bivalent alkylene group” may be improper according to MPEP. A change to “ **$R_f^1$  is a bivalent fluorinated alkylene group**” is needed for more clarification. Otherwise, it may confuse the ordinary skill in the art. See the correct wording used in specification on page 5 at lines 12-13.

(b) On **page 19** at line 14, recitation “persulfaric acid” is wrong and a correction to “**persulfuric acid**” is needed.

### *Claim Objections*

4. **Claim 1 is objected to** because of the following informalities:

(a) On **Claim 1** at lines 3-6, the language as "is obtained by reacting a fluorine containing compound having a fluorine containing elastomer segment obtained by polymerizing a fluorine containing monomer having a formula (1) as  $X^1-R_f^1-C(=O)-OR^1$ , with a silicone rubber having at least one amino group" is very confusing and it is also not consistent with the disclosure as disclosed in specification on page 3 at lines 16-26. According to specification, the graft or block polymer is obtained by reacting a fluorine containing compound with a silicone rubber having at least one amine group, wherein the fluorine containing compound is obtained by polymerizing a fluorine containing monomer with the fluorine compound having the formula (1)  $X^1-R_f^1-C(=O)-OR^1$ . **Rewriting is necessary.**

(b) On **Claim 1** at line 7, the use of language such as “ $R_f^1$  is a bivalent alkylene group” may be improper according to MPEP. A change to “ **$R_f^1$  is a bivalent fluorinated alkylene group**” is needed for more clarification. Otherwise, it may confuse the ordinary skill in the art. See the correct wording used in specification on page 5 at lines 12-13.

### *Claim Rejections - 35 USC § 102*

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5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. The limitation of parent **Claim 1** of the present invention relates to **a graft or a block polymer** comprising at least one kind of a **silicone rubber segment** and at least one kind of **fluorine containing elastomer segment**.

*wherein the graft or the block polymer is obtained by reacting a fluorine containing compound having a fluorine containing elastomer segment obtained by polymerizing a fluorine containing monomer having a formula (1) as  $X^I-R_f^I-C(=O)-OR^I$  with a silicone rubber having at least one amino group.*

*wherein  $X^I$  is an iodine atom or a bromine atom,  $R_f^I$  is a bivalent fluorinated alkylene group having 1 to 30 carbon atoms and possibly containing an oxygen atom, and  $R^I$  is an alkyl group having 1 to 3 carbon atoms.*

*See other limitations of dependent **Claims 2-3 and 9**.*

7. **Claims 1-3 and 9** are rejected under 35 U.S.C. **102(b)** as being anticipated by **Heeks et al. (US 5,736,250)**, **Konno et al. (US 5,141,991)**, **Kojima et al. (US 4,314,043)** or **Eguchi et al. (US 4,316,941)**.

Present **Claims 1-3 and 9** are drawn to a graft or block polymer which is described in **product-by-process** format. **According to MPEP:** It is well settled that where product by process claims are rejected over a prior art product that appears to be the same, the burden is shifted to the Applicant to establish an unobviousness difference, even if the production processes are different. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983). Furthermore, the patentability of a product claim rests on the product formed, not on the method by which it was produced. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

8. Regarding the **“graft or block polymer** comprising at least one kind of a **silicone rubber segment** and at least one kind of **fluorine containing elastomer segment**” limitation on parent Claim 1, **rewriting of the process (of making) may be necessary** according to above claim objection. According to pages **3** and **9** both at bottom section of specification, **the graft or block polymer is obtained by reacting a fluorine containing compound with a silicone rubber having at least one amine group**, wherein the fluorine containing compound is obtained by **polymerizing a fluorine containing monomer with the fluorine compound having the formula (1)  $X^1-R_f^1-C(=O)-OR^1$** .

9. Each of **four** references including **Heeks, Konno, Kojima and Eguchi** has individually disclosed the preparation of some “grafted” or “crosslinked” fluoropolymers, wherein each case comprises the claimed **two** components including: (A) a fluorinated polymer segment to be coupled with (B) an **amine-endcapped** silicone rubber segment.

To be specific, see **Heeks** at title; abstract; column 2, lines 43, 46 and 62; column 3, line 11, 14 and 25; column 7, line 8-61 for fluorocarbon elastomer crosslinked and/or grafted with amine-endcapped silicone rubber.

See **Konno** at title; abstract; column 2, line 25-68; column 5, line 1-25 for a fluororubber grafted with an amine-endcapped silicone rubber.

See **Kojima** at title; abstract; column 3, line 41—column 4, line 5; column 16, line 7-10 for a grafted copolymer comprising the claimed two segments such as fluoropolymer segment and amine-endcapped organopolysiloxane segment.

See **Eguchi** at title; abstract; column 2, line 66 – column 4, line 68 for a grafted copolymer comprising the claimed two segments such as fluoropolymer segment and amine-endcapped organopolysiloxane segment.

10. Dependent **Claim 2** relates to the fluoropolymer segment comprising VDF or TFE. See Heeks at column 6, line 42-51; see Konno at column 2, line 25-49; see Kojima at column 2, line 50-66; and see Eguchi at column 3, line 26-35.

Dependent **Claims 3 and 9** relate to the use of dimethylsiloxane or methyl-3,3,3-trifluoropropyl-siloxane in silicone rubber segment. See Heeks at column 7, line 8-50; see



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Konno at column 5, line 1-25; see Kojima at column 3, line 14-20; and see Eguchi at column 3, line 36-42.

### *Conclusion*

11. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. The following references relate to a graft or a block polymer comprising at least one kind of a silicone rubber segment and at least one kind of fluorine containing elastomer segment as specified:

**US 3,024,224 to Herbst et al.** only discloses a process for producing some fluoropolymers in the presence of co-monomer  $\text{CF}_2=\text{CHX}$  wherein X is F, Cl, Br and I so as to be useful as a polymerization modifier in controlling molecular weight. **The claimed halogen transfer mechanism may be involved** in the polymerization process (column 2, line 24-69). However, the claimed silicone rubber is not disclosed or suggested to be grated together with the fluoropolymer.

12. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu** whose telephone number is **(571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Vasu Jagannathan, can be reached on (571) 272-1119. The **fax** number for the organization where this application or proceeding is assigned is **(571) 273-8300** for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Peter D. Mulcahy/  
Primary Examiner, Art Unit 1796

/Henry S. Hu/  
Examiner, Art Unit 1796

February 12, 2009